

2 Sheets--Sheet 1.

T. A. EDISON.

Improvement in Printing-Telegraphs.

No. 131,337.

Patented Sep. 17, 1872.

Fig. 1.

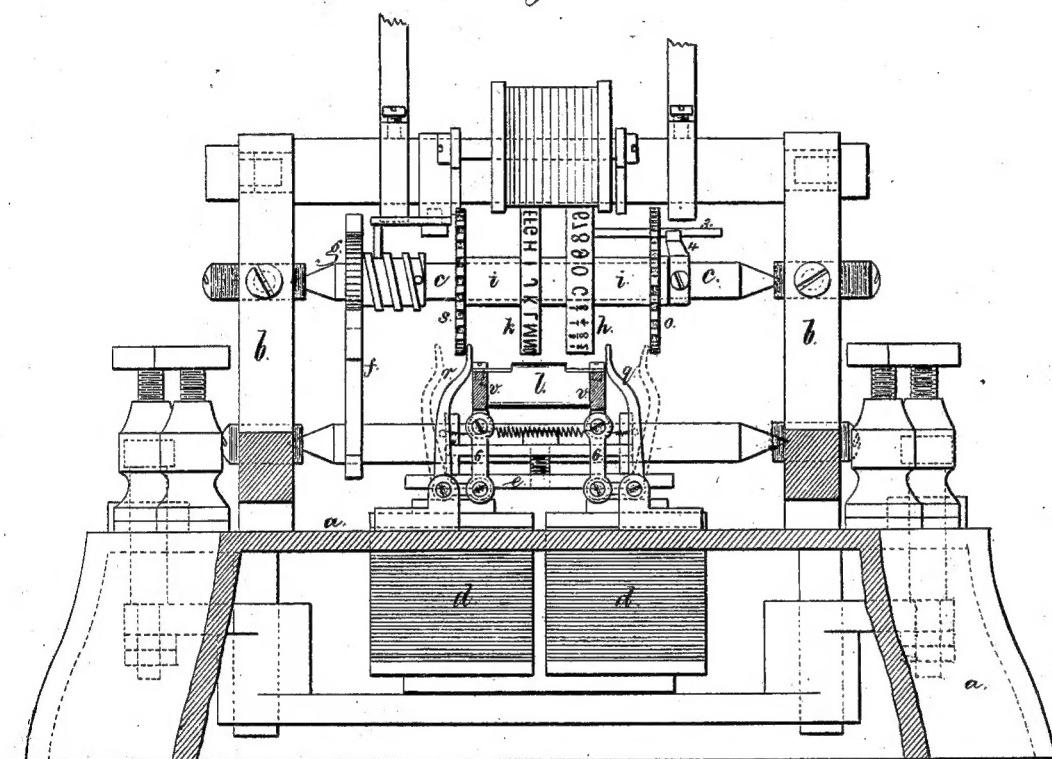
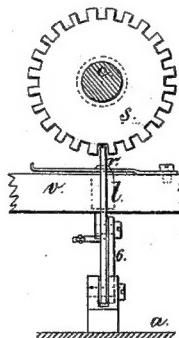


Fig. 2.



Witnesses

Charles Smith
Harold Penell

Inventor

Thomas A. Edison
Lemuel W. Pirrell
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Fig. 4.

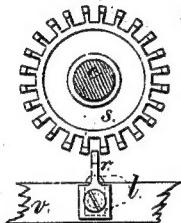
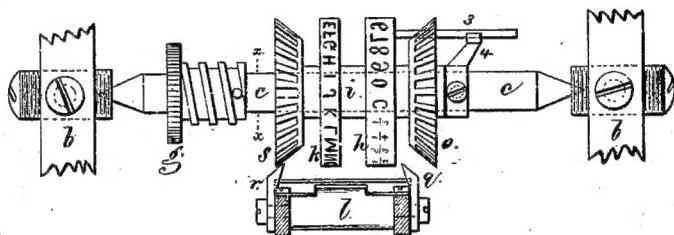


Fig. 3.



Chas H. Smith

Harold Surrell

Witnesses.

INVENTOR

Thomas A. Edison

Lemuel W. Surrell atty

UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN PRINTING-TELEGRAPHS.

Specification forming part of Letters Patent No. 131,337, dated September 17, 1872.

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Printing-Telegraphs; and the following is declared to be a correct description thereof.

This invention is for shifting the type-wheels lengthwise of the shaft so as to bring one into action and move the other out of action. This has been accomplished by me at certain points in the revolution of the type-wheel by pins upon the printing-lever acting upon a T-lever. I now dispense with the T-lever and provide for means for shifting the type-wheels at any letter. The escapement I employ receives motion from a magnet, and the type-wheels are rotated half of the space between one letter and the next when the circuit is closed, and the other half by the movement of the lever when the circuit is open; and the two type-wheels are so applied that the characters on one are in line for printing with the closed circuit and the other in line for printing with the open circuit. Notched wheels are applied at the sides of the type-wheels, and projections are moved by the printing-lever, so that if the type-wheel to be printed from is not in position the parts will be moved in the act of operating the printing-lever. It is to be understood that this printing instrument is operated by two line-wires on separate circuits, one through the printing-magnet and the other through the type-wheel magnet, and that a number of instruments can be used in the same circuits.

In the drawing, Figure 1 is an elevation, with the bed in section, of my instrument. Fig. 2 is a view of the notched wheel and lever endwise of the shaft. Fig. 3 shows the type-wheels, shaft, and notched wheels in a modified form; and Fig. 4 is a view endwise of the shaft, showing the notched wheel and actuating tooth.

The bed *a*, frame *b*, type-wheel shaft *c*, and type-wheel magnet *d* are of usual character. The armature *e* moves the step-by-step escapement or wedge-acting pallets of the lever *f* so as to move the wheel *g* and shaft *c* progressively half a letter space as the magnet *d* is energized, and the other half space when the magnet is discharged. The type-wheels *h* are placed upon the sleeve *i*, that can slide

endwise upon the shaft *c*, and is guided by the rod *3* and arm *4*, and the position of these type-wheels is such that a plane passing through the center of a letter on the wheel *h* will pass midway between two letters or characters on the wheel *k*; hence the characters on *h* will be in line with the impression-pad *l* for printing when the circuit through *d* is kept closed, and the characters on the wheel *k* will be in line for printing with the circuit open. In order to print from only one of the type-wheels it is necessary that either the type-wheels should be moved endwise or that the printing-pad should be moved from beneath one wheel to the other. I accomplish this by means of wheels *o* and *s*, that are notched around their edges with as many notches as there are type or letter spaces in the wheels; and these are placed in such position to the type-wheels that they control the impression. In Figs. 1 and 2 there are levers *q* and *r*, that are moved by the links *6* that connect with the printing-lever *v*; hence, each time the printing-lever is actuated the upper ends of these levers *q* and *r* swing outwardly. If the type-wheel requires to be shifted to print on an open circuit (when it had been printing on a closed circuit) the end of the lever *r* will come in contact with the projection of the wheel *s* and slide the type-wheels endwise and bring the type-wheel *h* into line for printing, and at the same time the end of the lever *q* will pass through one of the notches in *o*. The reverse movement will take place when the printing-lever is actuated while the type-wheel is held by its magnet on a closed circuit, so that the operator can select either type-wheel and impress a character from either the one or the other. The same end movement is given to the type-wheels by the mechanism shown in Figs. 3 and 4, in which the faces of the wheels *o* *s* are conical and are acted upon by the inclines *q* or *r* that take the place of the levers in Figs. 1 and 2; and it will be evident that if the printing-pad was mounted so as to be shifted endwise in a transverse slide upon the printing-lever it might be done by either of the movements aforesaid, and in that case the type-wheels and wheels *o* and *s* would remain stationary upon the shaft *c* and the printing-pad slide beneath them. A shield of thin sheet metal, with an opening through which the

impression is made, may also be employed, and either slide with the printing-pad or this shield alone may be moved transversely by the aforesaid mechanism to allow of the printing being from only one of the type-wheels at a time.

I claim as my invention—

1. The notched wheels *o s*, in combination with the type-wheels *h k*, and mechanism, substantially as set forth, for moving the type-wheels or the printing-pad, or shield to select the type-wheel from which the impression is to be made, substantially as set forth.

2. Two type-wheels, with the characters of one in line with the spaces between the characters on the other, and a step-by-step movement that is operative when the electric circuit is both closed and opened, in combination with the notched wheels *o* and *s*, and mechanism for selecting the type-wheel to be printed from, substantially as set forth.

3. The conical-faced notched wheels *o s*, in

combination with the inclined stops *q r* and type-wheels *h* and *k*, substantially as set forth.

4. The swinging levers *q* and *r*, actuated by the printing-lever *v*, in combination with the type-wheels *h* and *k* and notched wheels *o s*, substantially as set forth.

5. The combination of two type-wheels and a printing-lever, with mechanism moved by the printing-lever, substantially as set forth, for printing from one type-wheel when the type-wheel circuit is open and from the other when that circuit is closed, substantially as set forth.

6. A shifting movement derived from the printing-lever, operating in one direction with a closed circuit and in the other direction with an open circuit, substantially as set forth.

Signed by me this 10th day of June, 1872.
T. A. EDISON.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.